

SPECIAL SPECIFICATION

SECTION 14250S

VERTICAL RECIPROCATING CONVEYOR

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Furnish and provide all materials and labor necessary for the complete installation of Vertical Reciprocating Conveyor.
- B. Obtain information on conditions affecting work at jobsite. Including verification of dimensions, field material for anchoring, accessibility and storage space. Verify voltages and outlets on electrical drawings.
- C. Related Sections:
 - 1. Section 13085 – Seismic Protection.

1.02 WORK DONE BY OTHERS

- A. Suitable, legal, two-hour fire rated hoistway, if consistent with building construction.
- B. Hoistway door walls must not be erected until doors are set in place.
- C. Electrician shall furnish power supply with line disconnect switch immediately adjoining the controller cabinet.
- D. Hoistway free of all pipes and obstructions.
- E. Painting of exterior walls and prime finished components, which are exposed to view, including inside of car, car gates and doors.
- F. Suitable machine space with adequate lighting and convenience outlet.

1.03 REFERENCES

- A. Design and installation shall be in compliance with regulations and all governing agencies. Lift shall be subject to local, city and state approval prior to installation, along with city and state inspection after installation. Special local requirements shall be determined and handled locally by distributor with manufacturer's agreement.

1.04 SUBMITTALS

- A. Submit drawings or manufacturer's literature for approval. Drawings shall show rough-in requirements and wiring materials.

1.05 TESTING

- A. The Vertical Reciprocating Conveyor shall be tested after installation to demonstrate:
 - 1. Accuracy of stops.
 - 2. Operation of hoistway door locks and car gate switch(es).
 - 3. Operation of final terminal switches.
 - 4. Operation of push-button and key switches.
 - 5. Capacity load test. Operate unit for a period of twenty (20) minutes with a capacity load. Run unit from top terminal floor to bottom floor with one minute between starts after each stop.

PART 2 - PRODUCTS

2.01 PRODUCT TYPE

- A. Basis of Design: Matot Transaction Vertical Reciprocating Conveyor, manufactured by Matot Inc., Bellwood, Illinois.
- B. The car shall have clear inside dimensions of 42 inches wide x 42 inches deep x 66 inches high. Capacity to be 750 pounds. The Conveyor for the MicroLab shall serve 3 stops, and 3 openings, located on the same side of the hoistway. The Conveyor for the MicroFab shall serve 2 stops, and 2 openings, located on the same side of the hoistway. The car shall stop at floor level. The travel distance for the MicroLab shall be 50 feet. The travel distance for the MicroFab shall be 25 feet. Power supply shall be 480 volt, 3 phase, 60 hertz.
- C. All equipment shall be manufactured in accordance with the latest edition of the ASME B.20.1 Code for Conveyors and Related Equipment.

2.02 FABRICATION

- A. Car: Car dimensions shall be constructed of 16-gauge stainless steel with No. 4 satin polish finish. An electrical light fixture shall be recessed in the ceiling. The car shall have a reinforced floor. The car shall be equipped with a Type A instantaneous safety device.

- B. Car Gate: Car shall be equipped on each opening side with a gate matching the car construction and finish. The gate(s) shall be manually operated. The gate(s) shall be vertical bi-parting design and shall have a black, shop enamel finish.
- C. Guide Rails: Steel tee rails, steel channel rails or structural tube rails shall be furnished to guide the car. Guide rails shall be mounted to the floor slabs and hoistway wall with steel brackets.
- D. Stabilizer Rail: Steel rail shall be furnished to stabilize the car. Stabilizer rail shall be mounted to the floor slabs and hoistway walls with steel brackets.
- E. Machine: Machine shall be traction type. The AC motor shall be of ample horsepower to lift the rated load at the rated speed, with a high starting torque and low starting current and shall be controlled by a variable voltage, variable frequency drive. It shall be equipped with a spring applied and electrically released brake. Machine shall be located directly over the hoistway. The machine shall be mounted on a structural steel base. The traction sheave shall be semi-steel, with machined grooves designed to provide adequate traction and long cable life.
- F. Controller: Controller shall be wall-mounted type with lockable door, located on hoistway outer wall in sight of machine access door. Controller shall be solid state programmable and Underwriter's Laboratories, Inc. listed.
- G. Operation Control: Operation shall be automatic call/send. A push-button station with one button for each level served shall be furnished at each door. It shall be possible at each level to call the car or send it to any other level. Push buttons shall be inoperative while car is in transit, and for a few seconds after arrival at the selected level. Push buttons shall have stainless steel faceplates.
- H. Signal Devices:
 - 1. "Door Open" call buzzer shall sound when a push-button is pressed and a hoistway door or car gate is open.
 - 2. "Car Here" light and chime shall be located in each push-button station. Chime shall indicate car arrival. Light shall indicate car presence.
 - 3. Combination "Door Open" and "In-Use Light" shall be located in each push-button station. Light will illuminate when car is in transit and when a push-button is pressed and a hoistway door or car gate is open.
- I. Leveling Accuracy: When the car stops at floor level, car shall be no more than ¼" above or below the level of the hoistway doorsill.
- J. Hoist Ropes: Minimum 2 wire rope cables.

- K. Final Terminal Stopping Devices: Provide per code.
- L. Guides: Car and Counterweight guides shall be sliding or roller type.
- M. Hoistway Doors: Door shall be vertical sliding bi-parting. Each door shall bear the Underwriters "B" label and shall be rated for application in; (a) masonry shaft or (b) metal stud drywall shaft. Hollow metal door panels and welded unit wall frame, including jams, trim and sill shall be 16 gauge stainless steel with No. 4 satin polish finish. A retiring cam shall be provided at each open side of the car. A door interlock shall be provided on each door.
- N. Drawbridge: Models with bi-parting door car and car gates shall be equipped with drawbridge to provide smooth entrance for wheeled carts. Drawbridge shall be raised and lowered by opening and closing of car gate.
- O. Counterweight: The counterweight shall be equal in weight to that of the car plus 40% of the rated capacity.

2.03 PERFORMANCE

- A. Rated load 750 pound capacity.
- B. Rated speed shall be 75 FPM drive and control shall be variable voltage, variable frequency AC.
- C. Leveling Accuracy: Car floor shall be no more than ¼" above or below the level of the hoistway doorsill.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Coordinate work with general contractor.
- B. Leave standard electrical connection drawings with electrical contractor to make final electrical connection. Wiring within unit shall be done as part of work of this section.
- C. The installation of the Vertical Reciprocating Conveyor shall be made in accordance with the approved plans and specifications and manufacturer's installation instructions.

END OF SECTION